

PPPPPPPPPPPP		AAAAAAAAAA	TTTTTTTTTTTTTTTT	CCCCCCCCCCCC	HHH	HHH
PPPPPPPPPPPP		AAAAAAAAAA	TTTTTTTTTTTTTTTT	CCCCCCCCCCCC	HHH	HHH
PPPPPPPPPPPP		AAAAAAAAAA	TTTTTTTTTTTTTTTT	CCCCCCCCCCCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPP	PPP	AAA	TTT	CCC	HHH	HHH
PPPPPPPPPPPP		AAA	TTT	CCC	HHH	HHH
PPPPPPPPPPPP		AAA	TTT	CCC	HHHHHHHHHHHHHHHH	HHHHHHHHHHHHHHHH
PPPPPPPPPPPP		AAA	TTT	CCC	HHHHHHHHHHHHHHHH	HHHHHHHHHHHHHHHH
PPP		AAAAAAAAAAAAAAAA	TTT	CCC	HHH	HHH
PPP		AAAAAAAAAAAAAAAA	TTT	CCC	HHH	HHH
PPP		AAAAAAAAAAAAAAAA	TTT	CCC	HHH	HHH
PPP		AAA	TTT	CCC	HHH	HHH
PPP		AAA	TTT	CCC	HHH	HHH
PPP		AAA	TTT	CCC	HHH	HHH
PPP		AAA	TTT	CCC	HHH	HHH
PPP		AAA	TTT	CCCCCCCCCCCC	HHH	HHH
PPP		AAA	TTT	CCCCCCCCCCCC	HHH	HHH
PPP		AAA	TTT	CCCCCCCCCCCC	HHH	HHH

```

PPPPPPPP  AAAAAA  TTTT TTTT  GGGGGGGG  EEEEEEEEE  NN  NN
PPPPPPPP  AAAAAA  TTTT TTTT  GGGGGGGG  EEEEEEEEE  NN  NN
PP      PP  AA      AA  TT      GG      EE      NN  NN
PP      PP  AA      AA  TT      GG      EE      NN  NN
PP      PP  AA      AA  TT      GG      EE      NNNN  NN
PP      PP  AA      AA  TT      GG      EE      NNNN  NN
PPPPPPPP  AA      AA  TT      GG      EEEEEEEE  NN  NN  NN
PPPPPPPP  AA      AA  TT      GG      EEEEEEEE  NN  NN  NN
PP      AAAAAAAAAA  TT      GG      GG      EE      NN  NNNN
PP      AAAAAAAAAA  TT      GG      GG      EE      NN  NNNN
PP      AA      AA  TT      GG      GG      EE      NN  NN
PP      AA      AA  TT      GG      GG      EE      NN  NN
PP      AA      AA  TT      GG      GG      EE      NN  NN
PP      AA      AA  TT      GG      GG      EE      NN  NN
PP      AA      AA  TT      GG      GG      EEEEEEEEE  NN  NN
PP      AA      AA  TT      GG      GG      EEEEEEEEE  NN  NN
...
RRRRRRRR  EEEEEEEEE  QQQQQQ
RRRRRRRR  EEEEEEEEE  QQQQQQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RRRRRRRR  EEEEEEEE  QQ      QQ
RRRRRRRR  EEEEEEEE  QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EE      QQ      QQ
RR      RR  EEEEEEEEE  QQ      QQ
RR      RR  EEEEEEEEE  QQ      QQ

```

PATGEN.REQ - require file for PATCH facility

Version: 'V04-000'

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#### Modified by:

V03-01 MTR0006 Mike Rhodes 07-Jun-1982  
Add a new context flag for processing I^ immediate literals.

V0203 MTR0001 Mike Rhodes 01-Oct-1981  
Add new context bit definition, INIT\_PAT\_BIT to signify  
that the user had issued the /INITIALIZE qualifier to the  
SET PATCH\_AREA command. Its also added to the command  
qualifier bit definitions.

V0202 CNH0013 Chris Hume 12-Sep-1979 14:00  
Increase maximum symbol length to 31 characters.

V0201 KDM0013 KATHLEEN D. MORSE 01-FEB-1979 15:00  
Increase size of lexeme buffers from 20 to 25 (CHS\_PER\_LEXEME).  
(PATGEN.REQ V0201)

#### MACRO

ALONGWORD	=0, 0, 32%,	! OFFSET, POSITION, AND SIZE FOR A LONGWORD
NULL_POS_SIZE	=0, 0, 0%,	! NULL PSE FOR UNDOTTED REFERENCES TO BLOCKS
TBIT_FIELD	=4, 1, 0%,	! field in PSL containing the tbit
OPERAND_MODE	=0, 4, 4, 0%,	! MODE PART OF AN OPERAND
OPERAND_VALUE	=0, 0, 4, 0%,	! VALUE PART OF AN OPERAND

#### LITERAL

ADD\_THE\_OFFSET =1, ! ADD OFFSET TO VALUE



```

SUB_THE_OFFSET =0,          ! SUBTRACT OFFSET FROM VALUE

!++
! VALUES FOR REGISTER NAME TABLES
!--
REGISTER_COUNT =17,          ! Seventeen REGISTERS COUNTING PSL
REG_ENTRY_LEN  =1,          ! LENGTH IN LONGWORDS OF A REGISTER NAME ENTRY
BYTES_PER_LONGW =4,          ! BYTES PER VAX LONGWORD
A_BYTE         =1,          ! ADDRESS OFFSET FOR A BYTE
A_WORD         =2,          ! ADDRESS OFFSET FOR A WORD
A_LONGWORD     =4,          ! ADDRESS OFFSET FOR A LONGWORD
A_QUADWORD     =8,          ! ADDRESS OFFSET FOR A QUADWORD
A_PAGE         =512,        ! ADDRESS OFFSET FOR A PAGE

!++
! SIZE PARAMETERS
!--
NO_OF_INP_CHARS =132,        ! MAX NUMBER OF CHARACTERS IN INPUT LINE
                                ! ****MUST BE DIVISIBLE BY 4***
CHS_PER_LEXEME  =25,          ! MAX NUMBER OF CHARACTERS IN A SINGLE LEXEME
                                ! ****MUST BE DIVISIBLE BY 4***
NO_OF_TOKENS    =30,          ! MAX NUMBER OF TOKENS PERMITTED
                                ! ****MUST BE AN EVEN NUMBER***

NUM_MAX_LENGTH  =20,          ! MAXIMUM NUMBER OF CHARACTERS PER NUMERIC STRING
SYM_MAX_LENGTH  =31,          ! MAXIMUM NUMBER OF CHARACTERS PER SYMBOL
UPPER_CASE_DIF  =%a' - 'A',    ! DIFFERENCE BETWEEN ASCII REPRESENTATION OF UPPER AND LOWER CASE
ASCII_OFFSET    =%0'60',      ! OFFSET FROM NUMERIC VALUE TO ASCII VALUE

!++
! ASCII CHARACTER REPRESENTATIONS
!--
LINEFEED        =%0'12',      ! ASCII REPRESENTATION OF LINEFEED
CARRIAGE_RET    =%0'15',      ! ASCII REPRESENTATION OF CARRIAGE RETURN
ASC_AT_SIGN     =%ASCII 'a',  ! ASCII REPRESENTATION OF AN AT SIGN
ASC_CLOS_PAREN  =%ASCII ')',  ! ASCII REPRESENTATION OF CLOSED PARENTHESIS
ASC_COMMA       =%ASCII ',',  ! ASCII REPRESENTATION OF A COMMA
ASC_MINUS       =%ASCII '-',  ! ASCII REPRESENTATION OF A MINUS SIGN
ASC_OPEN_PAREN  =%ASCII '(',  ! ASCII REPRESENTATION OF OPEN PARENTHESIS
asc_period      =%ASCII '.',  ! ASCII representation of a period
ASC_PLUS        =%ASCII '+',  ! ASCII REPRESENTATION OF A PLUS SIGN
ASC_POUNDS      =%ASCII '#',  ! ASCII REPRESENTATION OF A POUNDS SIGN
ASC_QUOTE       =%ASCII '"',  ! ASCII REPRESENTATION OF A QUOTE CHARACTER
ASC_SPACE       =%ASCII ' ',  ! ASCII REPRESENTATION OF A SPACE
ASC_SQ_CLO_BRK  =%ASCII ']',  ! ASCII REPRESENTATION OF A CLOSED SQUARE BRACKET
ASC_SQ_OPN_BRK  =%ASCII '[',  ! ASCII REPRESENTATION OF AN OPEN SQUARE BRACKET
ASC_TAB         =%ASCII '\t', ! ASCII REPRESENTATION OF A TAB
asc_up_arrow    =%ASCII '^',  ! ASCII representation of an up arrow

! THE 'MODE' DATA STRUCTURE IS REALLY JUST
! A BYTE VECTOR WITH THE FOLLOWING CHARACTERISTICS.

MODE_LVL_SIZE   =7,          ! NUMBER OF BYTES IN EACH 'LEVEL'.
MODE_LEVELS     =4,          ! NUMBER OF LEVELS FOR MODE SETTINGS

```

! EACH LEVEL OF THE MODE DATA STRUCTURE HAS  
! THE FOLLOWING ENTRIES

MODE_RADIX	=0,	! RADIX - DEC, HEX, OCT, ETC.
MODE_LENGTH	=1,	! LENGTH - LONG, WORD, BYTE, ETC.
MODE_SYMBOLS	=2,	! BOOLEAN -> WHETHER WE KNOW VALUES ! AS "EXTERN + OFFSET" OR NOT.
MODE_INSTRUC	=3,	! BOOLEAN -> WHETHER WE INPUT/OUTPUT ! VALUES AS MACHINE INSTRUCTION.
MODE_ASCII	=4,	! BOOLEAN -> WHETHER WE OUTPUT (ONLY!) ! VALUES AS ASCII STRINGS OR NOT.
MODE_SCOPE	=5,	! Whether or not there is a CSP, ! (and whether we should apply it)
MODE_GLOBALS	=6,	! Whether or not we should apply ! global scope first in the search rules.

! THE FOUR LEVELS HAVE THE FOLLOWING  
! NAMES AND INDICES.

DEFAULT_MODE	=0,	! DEFAULT SYSTEM INITIALIZED MODE
USER_DEF_MODE	=1,	! USER-SET DEFAULT MODE
OVERRIDE_MODE	=2,	! ONE-LINE OVERRIDE MODE
LOCAL_MODE	=3,	! LOCAL MODE

! THE MODE\_LENGTH FIELD SHOULD BE ONE OF THE FOLLOWING

BYTE_LENGTH	=1,	! BYTE LENGTH
WORD_LENGTH	=2,	! WORD LENGTH
LONG_LENGTH	=4,	! LONGWORD LENGTH

! AND THE MODE\_RADIX FIELD SHOULD BE ONE OF:

DECIMAL_RADIX	=10,	! DECIMAL RADIX
HEX_RADIX	=16,	! HEXADECIMAL RADIX
OCTAL_RADIX	=8,	! OCTAL RADIX
binary_radix	=2,	! binary radix

! THE DEFAULT SETTINGS (SEE PAT\$INIT\_MODES IN PATMOD.B32)  
! FOR THE FIELDS ARE:

DEF_MODE_RADIX	=HEX_RADIX,	! HEX IS DEFAULT RADIX
DEF_MODE_LENGTH	=LONG_LENGTH,	! LONG IS DEFAULT LENGTH

!++  
! BIT CONFIGURATIONS FOR CONTEXT FLAGS.

CONTEXT_BITS	=32,	! NUMBER OF CONTEXT BITS
MODE_BIT	=0,	! MODE KEYWORD BIT
SET_NOT_ECO	=1,	! check not eco indicator
ALIGN_LONG	=2,	! ALIGNMENT ON LONGWORD BOUNDARY
ALIGN_QUAD	=3,	! ALIGNMENT ON QUADWORD BOUNDARY
ALIGN_WORD	=4,	! ALIGNMENT ON WORD BOUNDARY
ALIGN_PAGE	=5,	! ALIGNMENT ON PAGE BOUNDARY
ALIGN_BYTE	=6,	! ALIGNMENT ON BYTE BOUNDARY



```

MODULE_BIT      =7,      ! MODULE KEYWORD BIT
EXAMINE_BIT     =8;      ! EXAMINE COMMAND

LITERAL
OVERRIDE        =10,      ! OVERRIDE HAS BEEN SET
SCOPE_BIT       =16,      ! Command was SET Scope.
INIT_PAT_BIT    =17,      ! /INITIALIZE indicator
SET_ECO         =18,      ! SETTING ECO LEVEL OF THIS PATCH
PAT_AREA_BIT    =19,      ! PATCH AREA INDICATOR
INST_SUBST      =20,      ! ENABLE INSTRUCTION SUBSTITUTION
VERIFY_BIT      =21,      ! VERIFY COMMAND BIT
DELETE_BIT      =22,      ! DELETE COMMAND BIT
INSERT_BIT      =23,      ! INSERT COMMAND BIT
OPN_COM_FILE    =24,      ! OPEN COMMAND FILE BIT
LITERAL_BIT     =25,      ! /LITERAL INDICATOR
I_HAT_SEEN      =26,      ! PROCESS I^ immediate mode operand in context.

! QUALIFIER BITS FOR COMMAND LINE QUALIFIERS
MIN_QUAL        = 0,      ! MINIMUM QUALIFIER BIT USED
INSTR_QUAL      = 0,      ! /INSTRUCTION
DECIMAL_QUAL    = 1,      ! /DECIMAL
WORD_QUAL       = 2,      ! /WORD
BYTE_QUAL       = 3,      ! /BYTE
PATCH_QUAL     = 4,      ! /PATCH AREA
NOINSTR_QUAL    = 5,      ! /NOINSTRUCTION
LONG_QUAL       = 6,      ! /LONG
HEX_QUAL        = 7,      ! /HEX
ASCII_QUAL      = 8,      ! /ASCII
NOASCII_QUAL    = 9,      ! /NOASCII
OCTAL_QUAL      = 10,     ! /OCTAL
LITER_QUAL      = 11,     ! /LITERAL
INITIALIZE_QUAL = 12,     ! /INITIALIZE
MAX_QUAL        = 12,     ! MAXIMUM QUALIFIER BIT USED

! LOCATION TYPES FOR END RANGE ARGUMENTS
MEMORY_LOC      =0,      ! MEMORY LOCATION
REGISTER_LOC    =1;      ! REGISTER LOCATION

MACRO
!++
! OUT_DIAG_INFO OUTPUTS A DIAGNOSTIC MESSAGE TO THE TERMINAL. THIS
! MACRO CAN BE REDEFINED TO NULL WHEN THE DEBUGGER SEEMS TO FUNCTION
! MORE OR LESS AS DESIGNED.
!--
OUT_DIAG_INFO (MESSAGE) =
    BEGIN
    $FAD TT_OUT ('!//!AC!/', UPLIT BYTE (%CHARCOUNT (MESSAGE), %ASCII MESSAGE));
    END%;

PATGEN.REQ - last line

```



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